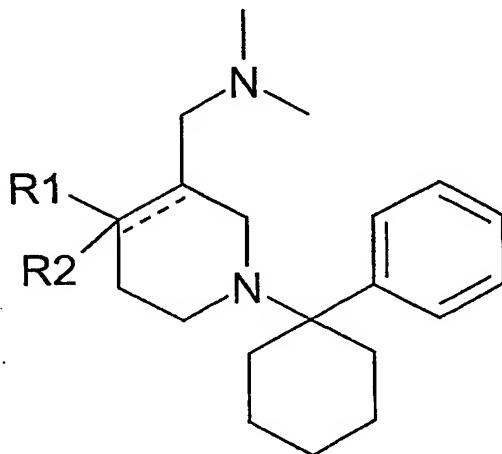


WHAT IS CLAIMED IS:

1. A substituted dimethyl-[1-(1-phenyl-cyclohexyl)-piperidin-3-ylmethyl]-amine compound corresponding to formula I



wherein

R1 = H, C₁₋₁₂-alkyl (branched or unbranched), vinyl, phenyl (mono- or poly-substituted by C₁₋₅-alkyl (branched or unbranched), H, F, Cl, Br, O-methyl, O-ethyl, O-propyl, O-butyl, S-methyl, OH, CF₃, or a combination thereof), benzyl (mono- or poly-substituted by C₁₋₅-alkyl (branched or unbranched), H, F, Cl, Br, O-methyl, O-ethyl, O-propyl, O-butyl, S-methyl, OH, CF₃, or a combination thereof), phenethyl (mono- or poly-substituted by C₁₋₅-alkyl (branched or unbranched), H, F, Cl, Br, O-methyl, O-ethyl, O-propyl, O-butyl, S-methyl, OH, CF₃, or a combination thereof), or

naphthyl (mono- or poly-substituted by C₁₋₅-alkyl (branched or unbranched), H, F, Cl, Br, O-methyl, O-ethyl, O-propyl, O-butyl, O-benzyl, S-methyl, OH, CF₃, or a combination thereof), and
R₂ = H, F, Cl, Br, O-methyl, O-ethyl, O-propyl, O-butyl, O-benzyl, S-methyl, OH, CF₃, or bond to the double bond;
or a salt thereof with a physiologically tolerated acid.

2. A compound according to claim 1, wherein said compound is present in the form of a pure enantiomer or a pure diastereoisomer.

3. A compound according to claim 1, wherein said compound is present in the form of a mixture of enantiomers or diastereoisomers.

4. A compound according to claim 1, wherein said compound is present in the form of a free base.

5. A compound according to claim 1, wherein R₁ is unbranched C₁₋₈-alkyl.

6. A compound according to claim 1, wherein R₁ is vinyl.

7. A compound according to claim 1, wherein R₁ is a phenyl radical substituted by F, Cl, OH or O-methyl.

8. A compound according to claim 1, wherein R₁ is benzyl.

9. A compound according to claim 1, wherein R1 is phenethyl.

10. A compound according to claim 1, wherein R2 is OH.

11. A compound according to claim 1, wherein said compound is:

3-dimethylaminomethyl-4-methyl-1-(1-phenyl-cyclohexyl)-piperidin-4-ol or the corresponding dihydrochloride;

3-dimethylaminomethyl-4-ethyl-1-(1-phenyl-cyclohexyl)-piperidin-4-ol or the corresponding dihydrochloride;

3-dimethylaminomethyl-1-(1-phenyl-cyclohexyl)-4-vinyl-piperidin-4-ol or the corresponding dihydrochloride;

4-butyl-3-dimethylaminomethyl-1-(1-phenyl-cyclohexyl)-piperidin-4-ol or the corresponding dihydrochloride;

3-dimethylaminomethyl-4-octyl-1-(1-phenyl-cyclohexyl)-piperidin-4-ol or the corresponding dihydrochloride;

3-dimethylaminomethyl-4-(3-methoxy-phenyl)-1-(1-phenyl-cyclohexyl)-piperidin-4-ol or the corresponding dihydrochloride;

3-dimethylaminomethyl-4-(2-fluoro-phenyl)-1-(1-phenyl-cyclohexyl)-piperidin-4-ol or the corresponding dihydrochloride;

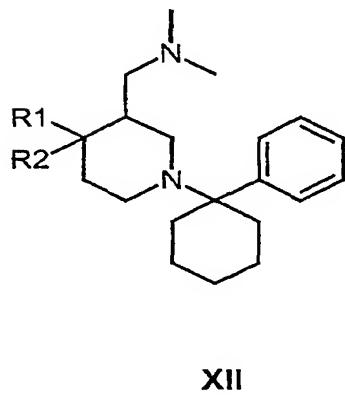
4-(3-chloro-phenyl)-3-dimethylaminomethyl-1-(1-phenyl-cyclohexyl)-piperidin-4-ol or the corresponding dihydrochloride;

4-benzyl-3-dimethylaminomethyl-1-(1-phenyl-cyclohexyl)-piperidin-4-ol or the corresponding dihydrochloride;

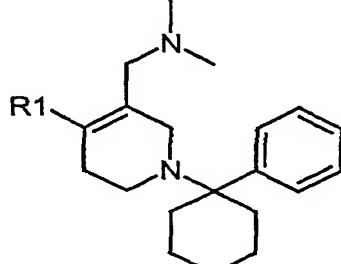
3-dimethylaminomethyl-4-phenethyl-1-(1-phenyl-cyclohexyl)-piperidin-4-ol or the corresponding dihydrochloride; or

3-dimethylaminomethyl-4-(3-hydroxy-phenyl)-1-(1-phenyl-cyclohexyl)-piperidin-4-ol or the corresponding dihydrochloride.

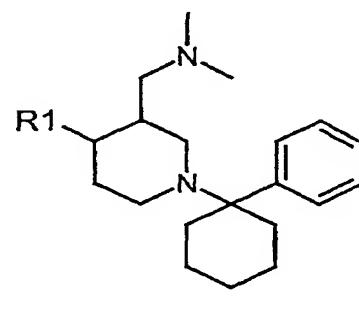
12. A process for the preparation of a compound of formula XII, XIII, or XIV,



XII



XIII



XIV

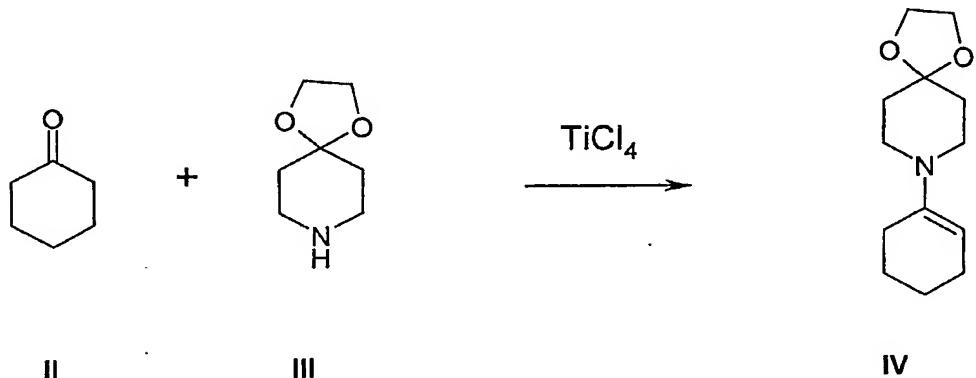
wherein

R1 = H, C₁₋₁₂-alkyl (branched or unbranched), vinyl, phenyl (mono- or poly-substituted by C₁₋₅-alkyl (branched or unbranched), H, F, Cl, Br, O-methyl, O-ethyl, O-propyl, O-butyl, S-methyl, OH, CF₃, or a combination thereof), benzyl (mono- or poly-substituted by C₁₋₅-alkyl (branched or unbranched), H, F, Cl, Br, O-methyl, O-ethyl, O-propyl, O-butyl, S-methyl, OH, CF₃, or a combination thereof), phenethyl (mono- or poly-substituted by C₁₋₅-alkyl (branched or unbranched), H, F, Cl, Br, O-methyl, O-ethyl, O-propyl, O-butyl, S-methyl, OH, CF₃, or a combination thereof), or

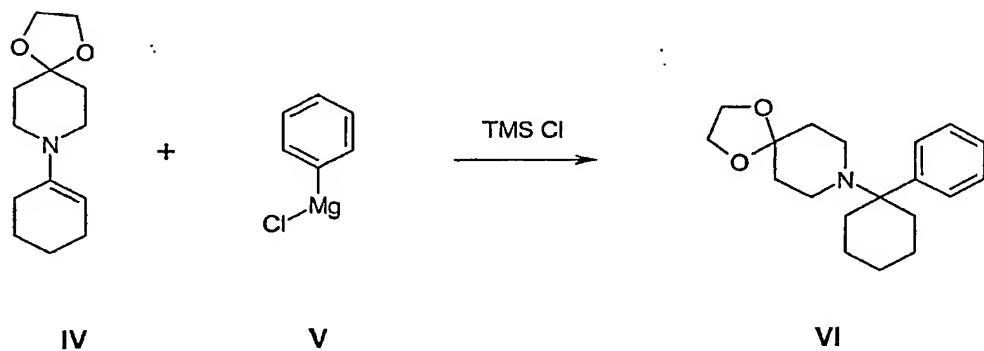
naphthyl (mono- or poly-substituted by C₁₋₅-alkyl (branched or unbranched), H, F, Cl, Br, O-methyl, O-ethyl, O-propyl, O-butyl, O-benzyl, S-methyl, OH, CF₃, or a combination thereof), and R₂ = H, F, Cl, Br, O-methyl, O-ethyl, O-propyl, O-butyl, O-benzyl, S-methyl, CF₃, or bond to the double bond,

said process comprising the steps of:

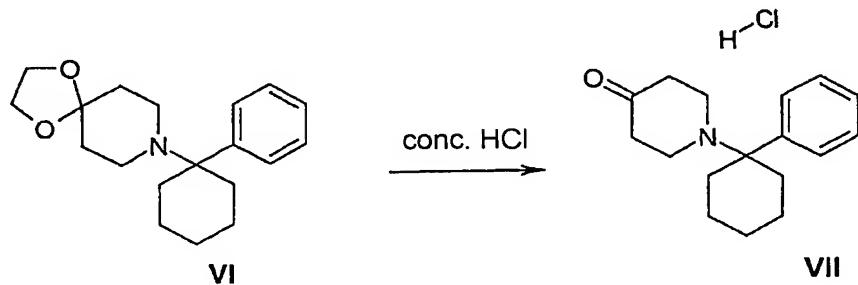
reacting a cyclohexanone (formula II) with 1,4-dioxa-8-aza-spiro[4.5]decane (formula III) in the presence of titanium tetrachloride to form an enamine of formula IV;



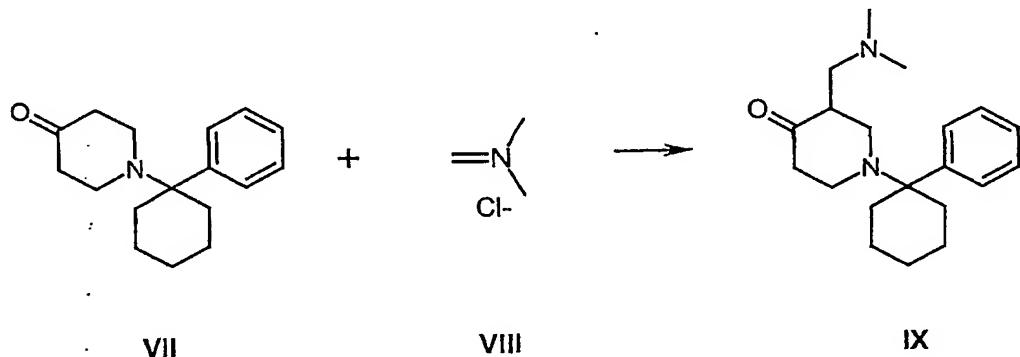
reacting the enamine of formula IV with phenylmagnesium chloride (formula V) in the presence of trimethylchlorosilane to form an amine of formula VI;



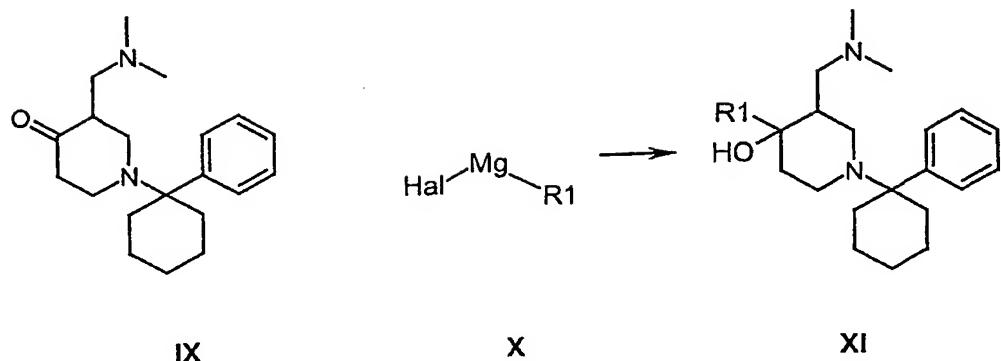
hydrolyzing and precipitating the amine of formula VI to form a hydrochloride of formula VII;



reacting the hydrochloride of formula VII with a variant of an Eschenmoser salt according to formula VIII to form a Mannich base of formula IX;

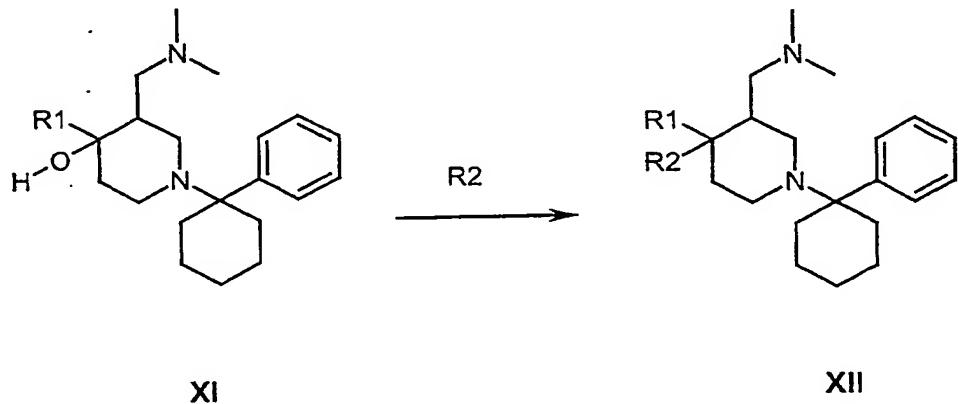


reacting the Mannich base of formula IX with a Grignard reagent of formula X, which has the organic radical R1, to form a compound of formula XI;

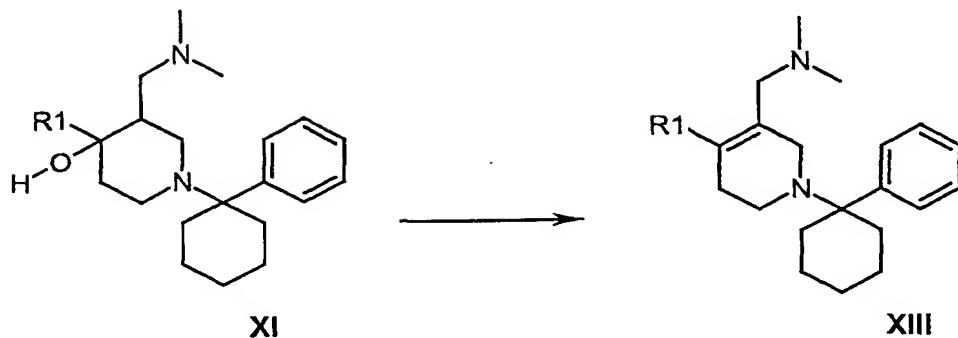


purifying the compounds of formula XI and isolating the compounds of formula XI in the form of salts of physiologically tolerable acids, wherein:

compounds of formula XII are obtained by reacting compounds of formula XI with reagents that replace the OH group in the 4-position of the compounds of formula XI by the radical R2;

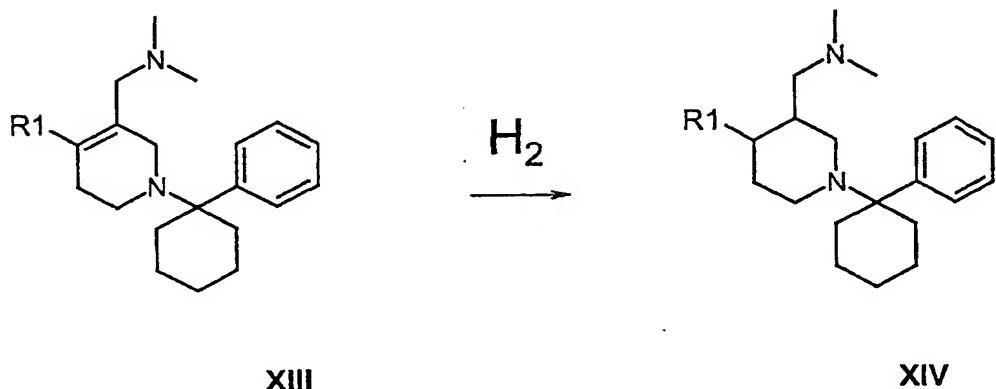


compounds of formula XIII are obtained by dehydrating compounds of formula XI;



or

compounds of formula XIV are obtained by reducing compounds of formula XIII with hydrogen.



13. A medicament comprising as an active ingredient a pharmaceutically effective amount of a compound according to claim 1 and a pharmaceutically acceptable carrier or adjuvant.

14. A medicament according to claim 13 wherein said active ingredient is present as a mixture of the enantiomers of a compound corresponding to

formula I according to claim 1, wherein the two enantiomers are not present in equimolar amounts.

15. A medicament according to claim 14, wherein one of the enantiomers has a content of from 5 to 45% in the enantiomeric mixture.

16. The medicament of claim 13 wherein said compound is present in the form of a pure enantiomer or a pure diastereoisomer.

17. The medicament of claim 13 wherein said compound is present in the form of a mixture of enantiomers or diastereoisomers.

18. The medicament of claim 13 wherein said compound is present in the form of a free base.

19. A method of alleviating pain in a mammal, said method comprising administering to said mammal an effective pain alleviating amount of a compound according to claim 1.

20. The method of claim 19 wherein said compound is administered in the form of a pure enantiomer or a pure diastereoisomer.

21. The method of claim 19 wherein said compound is administered in the form of a mixture of enantiomers or diastereoisomers.

22. The method of claim 19 wherein said compound is administered in the form of a free base.